

normal in the Middle and North Atlantic States, over the Great Lakes, and portions of the Ohio and Mississippi Valleys and in the central Rocky Mountain and Plateau regions. It was usually less than normal in the Appalachian Mountains, the East Gulf and South Atlantic States, and from Texas westward to the Pacific.

#### LOCAL STORMS.

*April 5.*—Early in the morning a severe storm swept over Wharton, Wharton County, Tex., injuring two people and causing about \$40,000 property loss.

Also, during the night a tornado caused about \$250,000 property damage at Clarendon, Donley County, Tex. No loss of life.

*April 6.*—A small tornado occurred near Beyersville, Williamson County, Tex., about 8 a. m. The storm

*April 15-16.*—Severe local storms traversed portions of seven counties in Mississippi, causing the loss of two lives, injury to about 25 persons, and considerable property damage. Full details of this storm are published in another portion of this REVIEW.

*April 16.*—Four tornadoes occurred in the early morning in Tennessee (see fig. 2), resulting in 2 people killed, and about 30 injured, and property loss of about \$100,000. Details are published on pages 198-199, above.

A severe storm during the morning at Birmingham, Ala., injured a number of persons and caused property loss estimated at \$100,000 to \$200,000. At other points in Alabama storms of tornadic character, together with severe local thunderstorms and heavy rains, caused the death of more than a dozen persons, injury to more than 50, and damage estimated at more than \$1,000,000. Full details of these storms are published on pages 197-198.

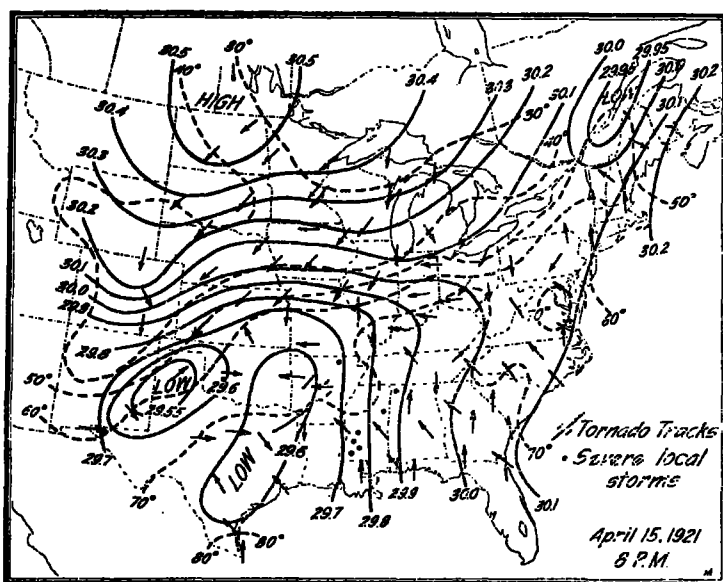


Fig. 1.

covered a distance of about 20 miles from near Elgin in the extreme northwestern part of Bastrop County to near Thorndale in the extreme southwestern part of Milam County. Width of storm averaged from 80 to 100 feet. No loss of life, due partly to sparsely settled conditions. Property loss about \$20,000. About fifteen houses destroyed.

*April 13.*—A tornado struck the town of Melissa in northern Texas at 2:45 p. m. The storm covered a wide area and swept as far south as Jacksonville, Tex. Eight persons were killed, and more than fifty injured. Practically every building in the business section of Melissa and many dwellings were demolished.

*April 15.*—A series of four tornadoes occurred in northern Texas and western Arkansas. The principal storm was first observed in northern Texas, but no great damage occurred until it had crossed the State boundary into Arkansas. The others were less destructive and were all confined to the latter State. (See fig. 1.) Full details covering these storms appear in another portion of this REVIEW.

*April 15-16.*—A severe gale and blizzard moved from Colorado to the upper Lake region. From six to sixteen inches of snow fell and much damage resulted from the wind and heavy snow. (See weather maps, figs. 1 and 2.)

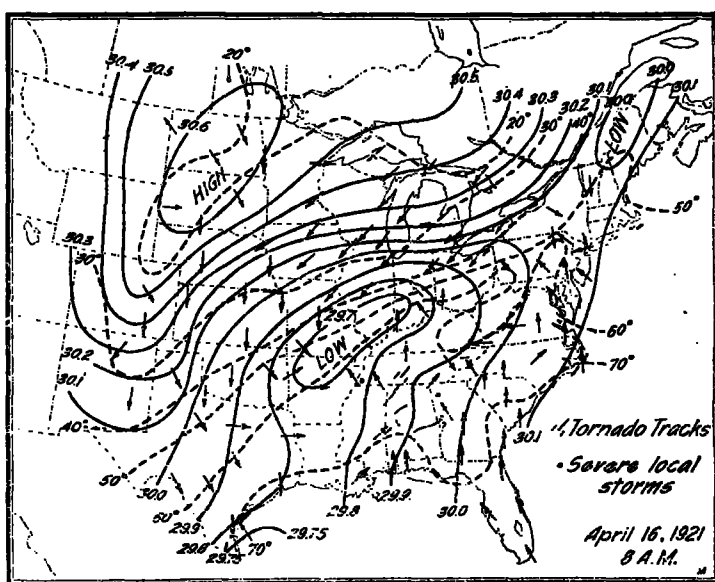


Fig. 2.

*April 16-17.*—Severe storm with heavy wet snow at Port Huron, Mich., caused much damage to overhead wire systems.

*April 19.*—A heavy wind storm occurred in the vicinity of Otto, Santa Fe County, N. Mex., during the afternoon, causing considerable property loss.

*April 22.*—A storm having some features of a tornado occurred near Thomasville, Ga., during the afternoon. Path about 4 miles long and 20 yards wide. No lives lost and property damage about \$1,000.

*April 23.*—A small tornado visited portions of Polk County, Fla., about 50 miles east of Tampa, during the early morning and destroyed a number of houses and caused property loss of about \$20,000. No one killed but several injured.

*April 25.*—A few persons were injured and considerable property damage occurred in several central and mid-western counties of Wisconsin during a severe wind storm.

Muscatine, Iowa, was visited about noon by a severe wind storm. Several buildings were unroofed or blown down. Also, during the afternoon in the vicinity of Dubuque, Iowa, a severe storm caused considerable property loss.

Central Illinois was likewise visited by a severe wind and rain storm during the night of the 25th that destroyed some property.

*April 26.*—Small tornadoes were reported at Carlisle and Gould, Ark., on the morning of the 26th. Estimated property damage \$20,000. No loss of life.

A tornado swept over Braxton, about 25 miles south of Jackson, Miss., about 3 p. m. of the 26th. Hardly a building was left standing in the town. Fifteen persons

were reported killed, 23 injured, and \$100,000 property loss.

A hail and wind storm visited Teague, Tex., during the night of the 26th and destroyed some property.

*April 29.*—Severe wind and dust storm in Sheridan, Wyo., caused much damage to wires and light structures.

## STORMS AND WARNINGS—WEATHER AND CROPS.

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### STORMS AND WEATHER WARNINGS.

#### WASHINGTON FORECAST DISTRICT.

During the first two weeks of the month there were no storm warnings issued, except for the Maine coast on the 11th, for the east Gulf coast from Bay St. Louis, Miss., to Cedar Keys, Fla., on the 13th and for the Atlantic coast from Norfolk, Va., to Boston, Mass., on the 14th. These warnings were not fully verified, except along the east Gulf coast.

The display of storm warnings on the Great Lakes was resumed on the 15th. Previous to that date advisory warnings of strong winds had been sent to open ports on Lake Michigan on the 1st, 4th, 13th, and 14th. At 8 p. m. of the 15th a strong area of high pressure was moving southeastward over the upper Lake region and the northwestern States, and a disturbance of wide extent was central over western Arkansas. As this pressure distribution is very favorable for strong north and northeast winds in the upper Lake region, especially on Lake Michigan, northeast storm warnings were ordered displayed at 10 p. m. on Lakes Michigan, Huron, and western Erie, and were extended eastward over eastern Lake Erie and Lake Ontario the following morning. The weather became very stormy, with rain, snow, and gales on all of the Great Lakes, except Superior, and at Chicago, Ill., the wind reached a maximum velocity of 56 miles an hour from the northeast during the 16th, winds of gale force continuing nearly 24 hours.

At 9:30 p. m. of the 17th storm warnings were displayed on the Atlantic coast from Cape Hatteras to Boston, Mass., and strong winds occurred during the night of the 17th-18th.

On the morning of the 20th a disturbance of marked intensity was central over Kansas and northeast storm warnings were displayed at 10 a. m. on Lake Superior and the northern portions of Lakes Michigan and Huron. Special observations at 1 p. m. showing a further increase in the intensity of the disturbance, southeast warnings were ordered at 4 p. m. for the southern portions of Lakes Michigan and Huron. At 10 p. m. the warnings were extended over western Lake Erie. The disturbance moved northeastward to the Upper Mississippi Valley with slowly decreasing intensity and winds of gale force occurred only over western Lake Superior. However, a secondary disturbance developed over the southern Plains States during the night of the 20th-21st and moved rapidly northeastward to Illinois where it was central at 8 a. m. of the 22d. Storm warnings were immediately ordered for all of the Great Lakes, except southern Lake Michigan, and at 9:30 p. m. were displayed on the eastern shore of southern Lake Michigan and on the Atlantic coast from Cape Hatteras to Portland, Me. At 10 a. m. of the 23d the warnings were extended northward to Eastport, Me. Strong winds occurred almost generally and verifying velocities were reached at a number of stations in the northern Lake region and along the Atlantic coast. The highest velocity reported was 52 miles an hour from the south at New York, N. Y.

A storm of marked intensity was central over the Plains States on the morning of the 24th, with lowest pressure 29.16 inches at Sioux City, Iowa, and northeast storm warnings were displayed at 10 a. m. on Lake Superior and extreme northern Lake Michigan. Gales occurred on Lake Superior as forecast. A secondary disturbance developed over the west Gulf States and moved rapidly northeastward to Illinois during the 25th, thence directly northward over Wisconsin and western Lake Superior, disappearing in the direction of Hudson Bay. Storm warnings were displayed on all of the Great Lakes, except extreme southern Lake Michigan, and winds of gale force occurred almost generally, except on Lake Ontario and eastern Lake Erie. The highest velocity reported was 56 miles an hour from the northwest at Duluth, Minn.

The last storm warnings of the month were displayed on the eastern Maine coast on the 30th, and they were fully verified.

Small craft warnings were displayed as follows:

16th and 21st: Bay St. Louis, Miss., to Cedar Keys, Fla.

17th: Jacksonville, Fla., to Cape Hatteras.

25th: Southern and central Lake Michigan.

Two general cool waves overspread the district during the month, with temperatures ranging from 10° to 25° below normal, and with frosts as far south as the east Gulf coast and extreme northern Florida. The first cool wave occurred during the 9th-11th and the second during the 17th-18th. Warnings of frost and freezing temperature were issued well in advance of their occurrence in the regions affected. Frost warnings were also issued for limited areas on the 1st and the 29th.—*Charles L. Mitchell.*

#### CHICAGO FORECAST DISTRICT.

The month of April in the Chicago forecast district was characterized by unusually warm weather, which prevailed throughout most of the month, modified to a marked degree by three cool periods; also by the movement across the district of five areas of low pressure of great intensity, accompanied by shifting gales and widespread precipitation. As a consequence it was an exceptionally windy month over most of the district.

The first disturbance appeared in the far Northwest on the 2d, but it had not reached its full development until the 4th, after passing southward to the Great Basin. It then moved directly eastward, and by the time it reached the central valleys on the 6th it began to lose some of its energy. Snow attended the movement of this storm in the Rocky Mountain region and Plains States, with a considerable fall in temperature and strong northerly winds. The snowfall in Wyoming and western Nebraska was unusually heavy. Live-stock warnings were sent to Montana, South Dakota, and western Nebraska on the 3d; to South Dakota and western Nebraska and Wyo-